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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/501,251	02/10/2000	Josef Theurer	THEURER-21	3590

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EXAMINER

WEST, JEFFREY R

ART UNIT PAPER NUMBER

2857

DATE MAILED: 04/17/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/501,251

Applicant(s)

THEURER ET AL.

Examiner

Jeffrey R. West

Art Unit

2857

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 March 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 February 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,493,499 to Theurer et al.

Theurer discloses a method of surveying a track (column 5, lines 62-66) comprising the steps of positioning a first and second measuring vehicle, the first measuring vehicle designed for mobility independent of the second stationary vehicle (column 4, lines 40-43), at end points of a track section to be measured (column 4, lines 15-18), determining the position coordinates of the second vehicle at the start of each measuring cycle with the aid of a GPS receiver relative to a fixed reference known within a terrestrial coordinate system (column 4, lines 24-34), wherein the fixed reference may either be a track reference point (column 4, line 23) or a fixedly installed GPS reference station (column 8, lines 1-4), and setting up a reference line in the form of an optical measuring beam between an emitter mounted on the second measuring vehicle and a receiving unit mounted on the first measuring vehicle (column 7, lines 23-31).

Theurer also describes the steps of aligning the reference line with the first measuring vehicle on the basis of the determined position data (column 5, line 66 to column 6, line 9), advancing the first measuring vehicle in the direction towards the second, stationary vehicle, by a predetermined distance and determining a displacement of the optical reference line perpendicular to a track direction, determining an absolute track location, as well as registering as a correction measurement value any change in position of the receiving unit mounted on the first measuring vehicle relative to the reference line (column 6, lines 30-34 and 50-56). Theurer also describes the process of repeating the movement and measurement steps until the first measuring vehicle is in close proximity to the second measuring vehicle, thereby surveying the track between the two end points (column 2, lines 1-8).

Theurer does not specify, however, placing the stationary calibrated satellite receivers (i.e. fixedly installed GPS reference stations) adjacent to the track section to be measured.

It would have been obvious to one having ordinary skill in the art to modify the invention of Theurer to include specifying that the stationary calibrated satellite receivers be adjacent to the track section to be measured, because the combination would have placed the stationary satellite receivers close to the mobile devices being tracked, allowing the mobile devices to be in the signal range of the stationary satellite receivers for a longer time, and therefore providing accurate tracking over a greater distance.

Response to Amendment

3. In response to the applicant's request, claim 2 has been cancelled without prejudice to the reentry of the same subject matter at any later time.

4. Applicant's arguments filed March 19, 2002, have been fully considered but they are not persuasive.

The applicant argues that the present invention uses a GPS receiver only on the stationary vehicle and not on the mobile vehicle, while the prior art uses a GPS receiver on both the first mobile vehicle and the second stationary vehicle. This argument is not well taken. Claim 1 only recites the limitation of a "stationary, second measuring vehicle, with the aid of a GPS receiver mounted thereon". It is silent on the inclusion of a GPS receiver mounted on the first measuring vehicle. Because the claims of the present invention do not prohibit the use of a GPS receiver mounted on the mobile vehicle, the applicant's argument does not warrant withdrawal of the rejection.

The applicant argues that the present invention uses a stationary GPS reference station to aid in the position determining of the stationary vehicle, while the prior art uses a track reference point to aid in the stationary vehicle positioning. As noted above, the prior art discloses determining the position coordinates of the second vehicle at the start of each measuring cycle with the aid of a GPS receiver relative to a fixed reference (Theurer et al., column 4, lines 24-34). Although, in this

implementation, the fixed reference is a track reference point, in column 8, lines 1-4, the prior art also describes using a number of sufficiently accurate stationary calibrated satellite receivers (i.e., fixedly installed GPS reference stations) in place of the track reference points. Further, it would have been obvious to one having ordinary skill in the art to include specifying that the stationary calibrated satellite receivers be adjacent to the track section to be measured, because it would place the stationary satellite receivers closer to the mobile devices being tracked, allowing the mobile devices to be in the signal range of the stationary satellite receivers for a longer time, and therefore providing accurate tracking over a greater distance.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

U.S. Patent No. 6,220,170 to Theurer et al. teaches a tamping machine for correcting the position of a railroad track, comprising a first GPS receiver mounted on, and mobile with, the tamping machine and a second stationary GPS receiver adjacent to the track.

U.S. Patent No. 5,638,078 to Wichtel teaches a communication and positioning device for guidance installation comprising guiding mobile units on a track system using reference-positioning equipment consisting of a fixed calibrated GPS reference station to increase accuracy by calculating corrections for differential GPS.

U.S. Patent No. 5,157,840 to Henttinen teaches a method of, and equipment for, determining the position of a track by measuring the angle changes between a mobile vehicle and a stationary point on the track.

U.S. Patent No. 5,613,442 to Ahola et al. teaches an arrangement and method for measuring and correcting the line of a track by monitoring the movement of an optical beam between two track vehicles.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrey R. West whose telephone number is (703)308-1309. The examiner can normally be reached on Monday thru Friday, 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marc S. Hoff can be reached on (703)308-1677. The fax phone numbers for the organization where this application or proceeding is assigned are (703)308-7382 for regular communications and (703)308-7382 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0956.

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Art Unit: 2857

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jrw
April 9, 2002


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SUPERVISORY PATENT EXAMINER
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